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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,267	07/14/2006	Nigel Paul Schofield	M03B327	7751

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EXAMINER	
TRIEU, THERESA	
ART UNIT	PAPER NUMBER
3748	

NOTIFICATION DATE	DELIVERY MODE
07/21/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LORETTA.SANDOVAL@EDWARDSVACUUM.COM

Office Action Summary	Application No.	Applicant(s)	
	10/586,267	SCHOFIELD, NIGEL PAUL	
	Examiner	Art Unit	
	Theresa Trieu	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 May 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is responsive to the applicants' amendment filed on May 11, 2010.

Claims 1 and 11 have been amended. Accordingly, claims 1-21 are pending in this application.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 11, the term "***can be maintained***" render the claim indefinite since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. In other words, under what condition the pressure differentials *is maintained* between the first and second flow paths when the screw pump is in operation and under what condition the pressure differentials *is not maintained* between the first and second flow paths when the screw pump is in operation. Therefore, the claims are being examined as best understood.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cygnor et al. (Cygnor) (Patent Number 4,631,009) in view of Wycliffe et al. (Wycliffe) (Patent Number 3,677,664).

Regarding claims 1 and 2, as shown in Fig. 4, Cygnor discloses a pump 30, 32, 34 comprising: a chamber defining with first and second externally threaded rotors 53, 54 mounted on respective shafts 57, 58 rotatably disposed for counter-rotation within the chamber a plurality of flow paths 35, 36; 37, 38; 39 40; 70, 72 having respective fluid inlets wherein a first one and a second one of the respective inlets 66, 68 are located at a common low pressure side of the chamber, and wherein threads of the first and second rotors 53, 54 are intermeshed at a location adjacent to the first and second inlets 66, 68, such that fluid entering the chamber via the first and second inlets is moved through the flow paths by the first and second rotors in a manner of positive displacement; a fluid outlet 42, 43, 44, 82 is located towards or at a common high pressure side of the chamber. However, Cygnor fails to disclose a pump being a screw pump.

Regarding claims 1 and 9, Wycliffe teaches that it is conventional in the screw pump to utilize the pump being a screw pump (see col. 3, lines 61-63); a pump body 14 defining said chamber, said body having first and second opposing plates (not numbered; however, clearly seen in Fig. 4) and wherein the first and second ones of the inlets are formed in the first plate and the fluid outlet is formed in the second plate. It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the screw vacuum pump as taught by Wycliffe in the Cygnor device since screw pump are routinely utilized as vacuum pumps.

Regarding claims 3-7, Cygnor further discloses the first one and the second one of the respective inlets are formed in a common surface defining the chamber (see Fig. 4); the first one and the second one of the respective inlets are located on a common plane (see Fig. 4); a first one and second one of the plurality of the flow paths merge at the fluid outlet of the chamber (see Fig. 4); a first one and a second one of the plurality of the flow paths are arranged such that fluid flows along the flow paths in substantially the same direction (see Fig. 4); a first one of the plurality of flow paths is defined between an internal surface of the chamber 14" and an external surface of the first rotor 4, and a second one of the plurality of flow paths is defined between the internal surface of the chamber 14" and an external surface of the second rotor 5.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cygnor in view of Wycliffe as applied to claim 1 above, and further in view of legal precedent.

The modified Cygnor discloses the invention as recited above; however, the modified Cygnor fails to disclose the difference pressure between the first and second inlets. It is examiner's position that one having ordinary skill in the screw pump art, would have found it obvious to have utilized a first one of the plurality of inlets is at a pressure higher than a pressure at a second one of the plurality of inlets during pumping, since it is merely design parameters depending on the being used for a particular purposes or solving a stated problem. Moreover, there is nothing in the record which establishes that the claimed pressure different between the first and second inlet, presents a novel of unexpected result *(See In re Kuhle, 526 F.2d 553, 188 USPQ 7 (CCPA 1975))*.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cygnor in view of Wycliffe as applied to claim 1 above, and further in view of Taniguchi et al. (Taniguchi) (Patent Number 6,196,810).

The modified Cygnor discloses the invention as recited above; however, the modified Cygnor fails to disclose a first pump and a second pump connected to the inlet of the screw pump.

Taniguchi teaches that it is conventional in the screw pump to utilize a first pumping unit 13a having an exhaust 18a connected to the first inlet 18 of the screw pump and a second pumping unit 13b having an exhaust 18b connected to the second inlet 18 of the screw pump. It would have been obvious to one having ordinary skill in the screw pump art at the time the invention was made, to have utilized the first and second pumps, as taught by Taniguchi in the Cygnor apparatus, since the use thereof would have provided a high vacuum performance expected of a multistage vacuum pump without shortening the lifetime of the pump.

5. Claims 11-17 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cygnor in view of Taniguchi et al. (Taniguchi) (Patent Number 6,196,810) and Wycliffe.

Regarding claims 11 and 12, Cygnor discloses a pumping arrangement comprising: a pump comprising a body defining a chamber housing first and second externally threaded rotors 53, 54 mounted on respective shafts 57, 58 rotatably disposed for counter-rotation within the chamber the rotors 53, 54 defining with the body first and second flow paths 35, 36; 37, 38; 39 40; 70, 72 passing through the chamber, each flow path having a respective fluid inlet 66, 68 located in said body; and wherein the fluid inlet 66, 68 of the first flow path 35, 37, 39, 70 and the fluid inlet of the second flow path 36, 38, 40, 72 are located at a common low pressure side

of the chamber; a fluid outlet 42, 43, 44, 82 is located at a common high pressure side of the chamber. However, Cygnor fails to disclose first and second pumping unit and the pump being a screw pump.

Taniguchi teaches that it is conventional in the screw pump to utilize a first pumping unit 13a having an exhaust 18a connected to the first inlet 18 of the pump and a second pumping unit 13b having an exhaust 18b connected to the second inlet 18 of the pump. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the first and second sources of Cygnor with the first and second pumps Taniguchi as a matter of simple substitution of one known element for another to obtain predictable results. KSR, 550 U.S. (2007).

Wycliffe teaches that it is conventional in the screw pump to utilize the pump being a screw pump (see col. 3, lines 61-63). It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the screw vacuum pump as taught by Wycliffe in the modified Behrends device since screw pump are routinely utilized as vacuum pumps.

Regarding claims 12-17 and 19-21, Cygnor discloses a fluid outlet 42, 43, 44, 82 is located at a common high pressure side of the chamber; each one of the respective inlets are formed in a common surface of the body 69, 72; each one of the respective inlets are located on a common plane (see Fig. 1); each one of the respective flow paths 35, 36; 37, 38; 39 40; 70, 72 merge at the fluid outlet of the chamber (see Fig. 1); each one of the respective flow paths are arranged such that fluid flows along the flow paths in substantially the same direction (see Fig. 1); a first one of the plurality of flow paths 35, 36; 37, 38; 39 40; 70, 72 is defined between the

body 1 and an external surface of the first rotor 53, 54, and a second one of the plurality of flow paths 35, 36; 37, 38; 39 40; 70, 72 is defined between the body and an external surface of the second rotor 53, 54; the fluid inlet of the first flow path and the fluid inlet of the second flow path are formed in a common surface of the body (see Figs. 1-2); each of the plurality of inlets are located on a common plane (see Fig. 1).

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cygnor in view of Taniguchi and Wycliffe as applied to claim 11 above, and further in view of legal precedent.

The modified Cygnor discloses the invention as recited above; however, the modified Cygnor fails to disclose the difference pressure between the first and second inlets. It is examiner's position that one having ordinary skill in the screw pump art, would have found it obvious to have utilized a first one of the plurality of inlets is at a pressure higher than a pressure at a second one of the plurality of inlets during pumping, since it is merely design parameters depending on the being used for a particular purposes or solving a stated problem. Moreover, there is nothing in the record which establishes that the claimed pressure different between the first and second inlet, presents a novel of unexpected result *(See In re Kuhle, 526 F.2d 553, 188 USPQ 7 (CCPA 1975))*.

Response to Arguments

7. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theresa Trieu whose telephone number is 571-272-4868. The examiner can normally be reached on Monday-Friday 8:30am- 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on 571-272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TT

/Theresa Trieu/
Primary Examiner, Art Unit 3748